FOX T USW 203

THREE INPUT SWITCHER WITH HDMI OUTPUT AND INTEGRATED FIBER OPTIC TRANSMITTER

- **Transmits HDMI or analog video, stereo audio, and RS-232 signals very long distances over fiber optic cabling**
- **All digital technology provides pixel-for-pixel performance with signals up to 1920x1200, including HDTV 1080p/60 & 2K**
- **Digital conversion of analog video and audio input signals**
- **Buffered HDMI output enables local display of the selected input**
- **Buffered VGA input loop-through**
- **Auto-input switching**
- **Key Minder® continuously verifies HDCP compliance for quick, reliable switching**
- **EDID Minder® automatically manages EDID communication between connected devices**
- **Audio embedding**
- **Audio gain and attenuation adjustment capability**
- **Available as multimode and singlemode models**

The FOX T USW 203 provides video, audio, and control signal extension over long distances for up to three sources, and offers a buffered HDMI output for local monitoring. It supports high resolution digital and analog formats, and includes many integrator-friendly features. The FOX T USW 203 is ideal for a wide range of applications requiring long haul transmission of high resolution content with the highest quality.

DESCRIPTION

The Extron **FOX T USW 203** is a three input switcher with a buffered HDMI output and integrated fiber optic transmitter that provides long haul transmission of HDCP-compliant HDMI, RGBHV, or HD component video, stereo audio, and RS-232 signals over fiber optic cabling. Engineered for reliability and exceptional high resolution image performance, it uses Extron all-digital technology to deliver perfect pixel-for-pixel transmission of images up to 1920x1200, including HDTV 1080p/60 and 2K. Designed specifically for AV systems, the transmitter includes many integrator-friendly features such as a buffered HDMI output, a VGA input loop-through, EDID Minder®, Key Minder®, audio embedding, audio gain and attenuation, auto-input switching, and real-time system monitoring.

The FOX T USW 203 provides AV signal switching and extension over long distances for up to two HDMI sources and one RGB source. The buffered HDMI output enables the video signal to be displayed on local and remote displays simultaneously. The switcher also offers a buffered VGA loop-through for a local monitor, enabling a computer input signal to be monitored without the need for an external distribution amplifier. Analog signals are digitized to ensure high quality transmission to the output destination. As part of the extensive FOX Series of fiber optic products from Extron, the FOX T USW 203 is compatible with FOX Series HDMI, DVI Plus, DVI, and VGA receivers. It can be used for simple point-to-point applications, or in combination with a FOX Series matrix switcher for support of enterprise installations.

This three input switcher is ideal for a wide range of applications requiring long distance transmission of high resolution content with the highest quality. Because transmission of content is inherently secure and immune to outside interference, fiber applications are favored in government, military, and medical environments. The FOX T USW 203 features industry standard LC-type connectivity.

To simplify integration, it features two Extron-exclusive technologies: EDID Minder and Key Minder. EDID Minder automatically manages EDID by maintaining continuous EDID communication with each source, ensuring that sources power up properly and reliably output content for display. For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption to support quick and reliable switching in professional AV environments.

The FOX T USW 203 accepts and digitizes unbalanced analog stereo audio, embedding the signal for extended transmission. The transmitter also provides input gain and attenuation control, eliminating noticeable volume differences when switching between sources.

Available in multimode and singlemode models, the FOX T USW 203 is ideal for AV systems with a variety of digital and analog devices.

FEATURES

- **Transmits HDMI or analog video, stereo audio, and RS-232 signals very long distances over fiber optic cabling**
- **All digital technology provides pixel-for-pixel performance with signals up to 1920x1200, including HDTV 1080p/60 & 2K** – The FOX T USW 203 delivers pixel-for-pixel transmission of video signals to ensure optimal image quality at up to 1920x1200.
- **Digital conversion of analog video and audio input signals** – Analog signals are digitized, ensuring that a reliable, high quality digital video signal is sent to the output destination.
- **Buffered HDMI output enables local display of the selected input** – When the VGA input is selected, the HDMI output provides video-only. When an HDMI input is selected, the output signal includes video and embedded audio, if present.
- **Buffered VGA input loop-through** – Provides a local monitor output for the VGA input, enabling a computer input signal to be monitored without the need for an external distribution amplifier.
- **Auto-input switching** – Automatically switches to the highest priority input with an active video signal for simplified operation.
- **HDCP compliant**
- **Key Minder® continuously verifies HDCP compliance for quick, reliable switching** – Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source to multiple displays.
- **EDID Minder® automatically manages EDID communication between connected devices** – EDID Minder ensures that all sources power up properly and reliably output content for display.
- **Audio embedding** – When the analog input is active, analog stereo audio input signals are converted to digital HDMI audio.
- **Audio gain and attenuation adjustment capability**
- **LED indicators for signal presence, HDCP, and power** – Provides a visual indication of system status for real-time feedback and monitoring of key performance parameters.
- **RS-232 control** – The FOX T USW 203 features an RS-232 serial port for control and configuration.
- **Contact closure remote control**
- **Alarm notification for fiber link loss** – The FOX T USW 203 transmitter can be set up to trigger an external control system for immediate notification when a fiber link has been lost.
- **Available as an 850 nm multimode model for moderate-range transmissions, and a 1310 nm singlemode model for extreme distances up to 30 km (18.75 miles)**
- **Industry standard LC connectors provide reliable physical connectivity and precise fiber core alignment**
- **Compatible with Extron FOX Matrix Switchers to create HDCP-compliant systems up to 1000x1000 and larger**
- **Compatible with Extron FOX Series HDMI, DVI Plus, DVI, and VGA receivers** – Compatible with FOX Series HDMI and DVI Plus receivers up to 1920x1200, including HDTV 1080p/60 and 2K. Compatible with FOX Series DVI and VGA receivers up to 1600x1200, including HDTV 1080p/60 and 2K.
- **Includes LockIt® HDMI cable lacing brackets**
- **Energy-efficient external universal power supply included**

SPECIFICATIONS

NOTE: These units are class 1 laser products. They meet the safety regulations of IEC-60825, FDA 21 CFR 1040.10, and FDA 21 CFR 1040.11.

OPTICAL FIBER INTERCONNECTION BETWEEN TRANSMITTER OR FIBER MATRIX SWITCHER AND RECEIVER

Number/type	1 or 2 fiber optic
Connectors	2 LC connectors
Operating distance	
Singlemode	30 km (18.75 miles) with singlemode (SM) cables with a SM unit
Multimode	300 m (984') with 62.5 µm OM1 multimode (MM) cables with a MM unit 1 km (3280') with 50 µm OM2 multimode (MM) cables with a MM unit 2 km (6561') with 50 µm OM3/OM4 2000 MHz bandwidth laser optimized multimode cable with a MM unit
Nominal peak wavelength	850 nm for MM units, 1310 nm for SM units
Data rate	4.25 Gbps
Maximum pixel clock	165 MHz
Transmission power	
Singlemode	-5 dBm, typical
Multimode	-5 dBm, typical
Maximum receiver sensitivity	
Singlemode	-18 dBm, typical
Multimode	-12 dBm, typical
Optical loss budget	
Singlemode	13 dB, maximum
Multimode	7 dB, maximum

VIDEO

Digital	
Resolution range	Up to 1920x1200 or 1080p @ 60 Hz, 8-bit color
Formats	RGB and YCbCr digital video
Standards	DVI 1.0, HDMI compliant, HDCP 1.1, CEA-861E
Analog	
Maximum resolution	Up to 1920x1200 or 1080p @ 60 Hz pixel for pixel
Signal type	VGA-UXGA RGBHV, RGBS, component video
Gain	Unity
Pixel data bit depth	8 bits per channel, 3 channels (R, G, B; or YUV)

VIDEO INPUT AND LOOP-THROUGH

Digital	
Number/signal type	2 HDMI, DVI, or DisplayPort
Connectors	2 female HDMI
Equalization	Up to 50' of cable
Analog	
Number/signal type	1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (YUVp/HDTV) 1 Loop-thru VGA-UXGA RGBHV
Connectors	1 female 15-pin HD
Nominal level	1 Vp-p for Y of component video 0.7 Vp-p for RGB and for R-Y and B-Y of component video
Minimum/maximum levels	Analog: 0.3 V to 0.75 Vp-p with no offset, terminated
Impedance	75 ohms
Horizontal frequency	24 kHz to 100 kHz
Vertical frequency	40 Hz to 120 Hz
Return loss	<-40 dB @ 5 MHz

VIDEO OUTPUT — SWITCHED, LOCAL

Number/signal type	1 HDMI switched output
Connectors	1 female HDMI
Equalization	Up to 50' of cable
Nominal level	0.8 Vp-p

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs, bi- level and tri-level component video (480p, 576p, 720p, 1080i, 1080p)
Input level	2.5 V to 5.0 Vp-p
Input impedance	510 ohms
Polarity	Positive or negative (follows input or can be set by user)

AUDIO

Gain	
Range	Adjustable, -18 dB to +10 dB
Default	Balanced output: -6 dB
Frequency response	20 Hz to 20 kHz ±0.5 dB
THD + Noise	0.10% @ 1 kHz at nominal level
S/N	>80 dB at maximum output (unweighted)
Audio bits per sample	18 bits per channel, 2 channels (L, R)
Sampling rate	48 kHz

AUDIO INPUT

Number/signal type	1 unbalanced stereo
Connectors	(1) 3.5 mm mini stereo jack
Impedance	>10k ohms unbalanced
Nominal level	-10 dBV (316 mVrms)
Maximum level	+7 dBV unbalanced

CONTROL/REMOTE

Serial control ports	
Control	1 RS-232, 3.5 mm captive screw connector, 3 pole (rear panel)
Pass-through	1 RS-232, 3.5 mm captive screw connector, 5 pole (3 pins are used, "RS-232 Over Fiber", shared with alarm port) (rear panel)
Baud rate and protocol	
Control	9600 baud, 8 data bits, 1 stop bit, no parity
Pass-through	9600 to 115,200 baud
Serial control pin configuration	1 = Tx, 2 = Rx, 3 = GND
USB control port	1 front panel female mini USB B
USB standards	USB 2.0, low speed
Contact closure	(1) 3.5 mm captive screw connector, 4-pole
Contact closure pin configuration	1 = input 1, 2 = input 2, 3 = input 3, 4 = GND

GENERAL

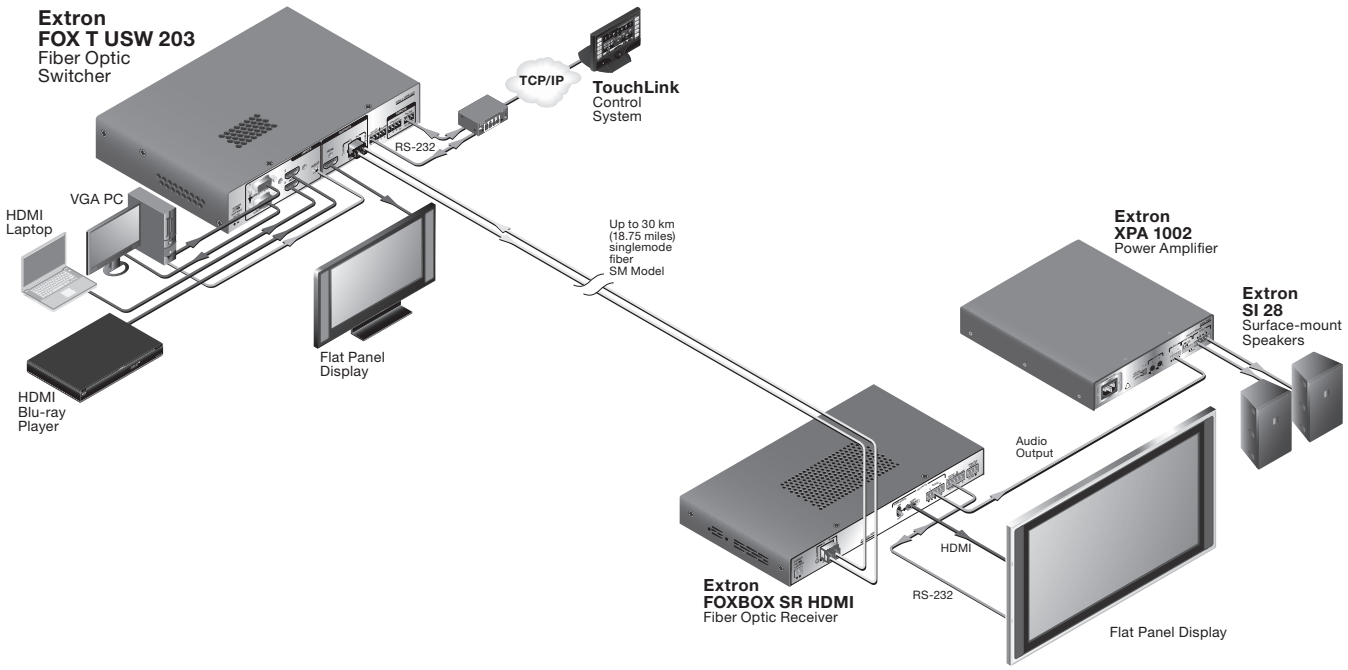
Power supply	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1 A, 12 watts
Power consumption	
Device	8.0 watts, 12 VDC
Device and power supply	9.8 watts, 100-240 VAC, 50-60 Hz
Cooling	Convection, vents on side panels
Thermal dissipation	
Device	25.9 BTU/hr
Device and power supply	32.1 BTU/hr
Mounting	
Rack mount	Yes, with optional rack shelf
Furniture mount	Yes, with optional under desk mounting kit
Enclosure type	Metal
Enclosure dimensions	1.75" H x 8.75" W x 6.0" D (half rack wide) (Depth excludes connectors)
Regulatory compliance	
Safety	CE, c-UL, FDA Class 1, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Environmental	Complies with the appropriate requirements of RoHS, WEEE
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

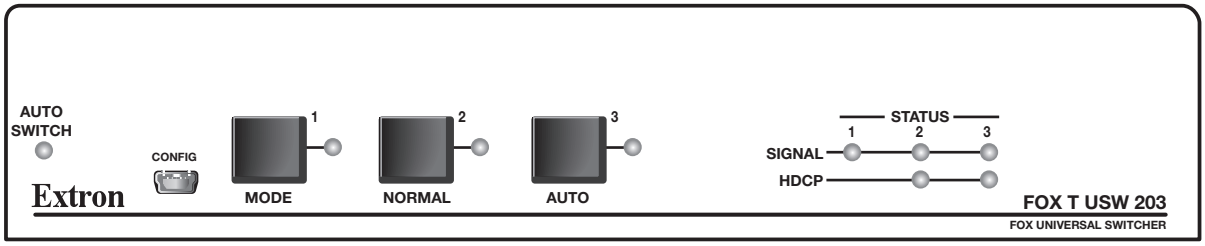
Model	Version Description	Part number
FOX T USW 203 MM	Three-Input Transmitter - Multimode	60-1230-11
FOX T USW 203 SM	Three-Input Transmitter - Singlemode	60-1230-12

For complete specifications, please go to www.extron.com
Specifications are subject to change without notice.

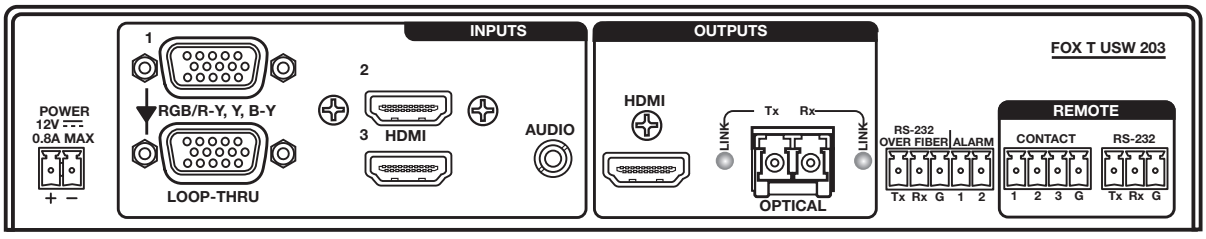
APPLICATION DIAGRAM



PANEL DRAWINGS



FOX T USW 203 - Front



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